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ABSTRACT

The potential use of the preferred imaging technique by the Office of Planning and Analysis of the University of Texas System is discussed, along with the use of environmental scanning. Preferred imaging is used to get people thinking about the future and how it relates to the external environment and the planning process. Preferred imaging appears to take advantage of the broad range of expertise available in the university and can be implemented quickly and efficiently. A session on imaging a preferred future of the University of Texas System was conducted with the planning representatives from the 14 component institutions. Over 70 images were produced in 15 minutes by a group of 18 people. Subgroups then identified steps to be taken before these images could become reality. It was discovered that the same themes were underlying the action steps for all three images. An in-depth analysis will now be conducted on these underlying themes. The imaging technique encourages planners to be more proactive than when using more conventional scanning methods. Scanning is the process by which indicators of change in the environment are identified. Environmental analysis then looks beyond the issues identified by environmental scanning to an evaluation of those issues. (SW)

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EXTERNAL ANALYSIS AND PLANNING

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SOUTHERN ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the 1984 Annual Conference of the Southern Association for Institutional Research held in Little Rock, Arkansas, October 24-26, 1984. It was reviewed by the SAIR Publications Committee and was judged to be of interest and pertinent to others concerned with the research in higher education. This paper has therefore been selected to be included in the ERIC collection of Conference Papers.

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EXTERNAL ANALYSIS AND PLANNING

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Foresight in identifying the major issues which will affect higher education will be a factor that separates good institutions from those of the highest caliber.

After first considering the use of a formal environmental scanning process to identify emerging external forces, the Office of Planning and Analysis of the University of Texas System has been exploring the technique of preferred imaging. Preferred imaging appears to take better advantage of the broad range of expertise available in the university and can be implemented quickly and more efficiently.

A session on imaging a preferred future of the University of Texas System was conducted with the Planning Representatives from the 14 component institutions. Over 70 images were produced in 15 minutes by a group of 18 people. Subgroups then identified steps to be taken before these images could become reality. It was discovered that the same themes were underlying the action steps for all three images. An in-depth analysis will now be conducted on these underlying themes.

The imaging technique encourages those involved in planning to be more proactive than when using more conventional environmental scanning methods. Preliminary results indicate that it will be a useful technique.

EXTERNAL ANALYSIS AND PLANNING

Foresight in identifying the major issues which will affect higher education will be a factor that separates good institutions from those of the highest caliber. There are many ways by which an institution can look towards the future: futuring techniques, cross-impact analyses, multiple scenerio analysis and environmental scanning are a few examples. This paper discusses the two approaches that were considered by the Office of Planning and Analysis of the University of Texas System in its attempt to incorporate a more thorough analysis of the external environment into the planning process. Environmental scanning was first considered, and we are now experimenting with some aspects of "preferred imaging", one of several futuring techniques.

Enrollment declines, uncertain financial conditions and the rapid growth of technology have all contributed to the uncertain future of higher education -- uncertain not in terms of whether or not it will survive, but uncertain in terms of how the enterprise should change. Higher education institutions cope with this uncertainty in different ways — some may choose to prepare for contingencies and maintain a posture of reacting to conditions as they happen while others will choose to look to the future, identify indicators of change, and proactively select and initiate action that can help shape the future in which they will live.

EMERGING ISSUES

Those institutions looking beyond internal conditions to the external environment will "...anticipate internal changes brought on by changing external conditions" (Heydinger, 1983). These "changing external

conditions" can be identified through a screening process which will identify emerging issues. Scanning, "a screening of an information resource with some criteria for items for special treatment " (Morrison and Renfro, 1984), allows one to identify those issues that will affect operations but have not yet begun to receive significant attention (Renfro and Morrison, 1983a). For example, Stanford University foresaw the emerging importance of the role of technology and established the Stanford Research Institute. Similarly, the Civil Engineering Department at MIT identified computer-aided design as an area of emphasis long before the term was commonly used. These two institutions had programs in place and operating by the time many others were just recognizing the issues as being important. It is this foresight in being able to have operations running when others are just realizing the directions of change that can make the difference between a 'good' school and a school of the highest caliber.

STRATEGIC PLANNING AND THE EXTERNAL ENVIRONMENT

Heydinger (1983) has identified four aspects of strategic planning: 1) setting goals, 2) understanding the environment, 3) developing strategies and 4) agreeing on a plan. The University of Texas System Administration, the administrative unit for its fourteen component institutions through its Office of Planning and Analysis, is coordinating a strategic planning process for the component institutions. The Office of Planning and Analysis is presently focusing its efforts on aiding the components in understanding the environment, the second of Heydinger's four aspects of planning. In Heydinger's words, "Strategic planning ... takes cognizance of forces that are external to the organization, and which can potentially affect the organization's attainment of its goals." According to Enzer (1983), "Traditional strategic planning exhibits two important structural

weaknesses in its handling of long-term change: It generally assumes a complete separation between the organization and the external environment -- that is, that the organization cannot and does not affect social conditions -- and it is also liable to underestimate the external environment's variablity. The Office of Planning and Analysis first looked to environmental scanning as a method by which the environment may be studied in order to identify emerging issues.

ENVIRONMENTAL SCANNING

F.J. Aguilar (1976) in one of the most often quoted definitions of environmental scanning refers to it as a process "that seeks information about events and relationships in a company's outside environment, the knowledge of which would assist top management in its task of charting the company's future course of action." The majority of the literature on environmental scanning deals with it in the corporate milieu. Fahey and King (1977) questioned twelve large business corporations concerning the extent to which they used environmental scanning. They concluded "That while there is a general awareness of the importance of environmental scanning, the surveyed corporations have not yet succeeded in developing sophisticated environmental scanning and integrating it into their strategic planning process." Klein and Newman (1980) begin their article on integrating environmental scanning and strategic planning with examples of companies that failed because they did not recognize or respond to factors in the environment. Hambrick (1981) found that "neither hierarchical level nor function area (of executives) was strongly or consistently related to the focus or overall amount of scanning activity." Terry (1977) describes "...some of the mechanisms which have been used to help companies scan their environments as a way of planning and controlling

their destiny in the turbulent environment in which industry operates."

A distinction needs to be made at this time between the concepts of environmental scanning and environmental analysis. Scanning is the process by which indicators of change in the environment are identified. Environmental analysis then looks beyond the issues identified by environmental scanning to an analysis or evaluation of those issues. While Renfro and Morrison see this as two steps in the same process (1983b), they can be thought of as separate tasks. For example, if the environmental scanning process has identified 'declining enrollment' as an emerging issue, then environmental analysis would look to demographics and other such areas to determine the impact of this issue. This concept of environmental analysis becomes important again in the discussion of futuring and imaging the preferred future.

While environmental scanning has been used in the corporate world, one may wonder what this has to do with higher education. There are several factors which speak to the need for external analysis in higher education: the change in the composition of student bodies, the tightening and/or expansion of institutional budgets, the increase in available information, the development of new areas of knowledge, and greater competition among institutions.

During the 1960's and early 1970's, enrollments were increasing and schools flourished. More often than not, requests for new programs were granted. Today however, we are seeing a decrease in the number of traditional college age students and a tightening of state budgets, which means that careful planning for the allocation of educational resources has to be a priority in higher education. It is not enough now to react to what is happening -- institutions of higher education must anticipate the issues that will affect them and then appropriately respond to the needs

foreseen.

In addition, many institutions are seeking increased endowments and budgets which is creating a need for proper financial planning and budgeting. At this point, environmental scanning can play a major role in identifying the potential areas of concentration for university funds and resources. For example, the emerging issue of robotics and its role in today's commerce has brought about the budgeting of time and people by several institutions in researching and refining this field.

The burgeoning amount of information available makes it impossible for any one person to keep up with everything that may affect higher education. However, this wealth of knowledge can enhance the planning process for colleges and universities if carefully and deliberately used.

CHOICE OF PREFERRED IMAGING TECHNIQUE AS FIRST STEP

The Office of Planning and Analysis considered implementing a System-wide structure for environmental scanning, but then delayed after discussion with other institutions and administrators who had experience with the technique. This decision was made for a number of reasons. First, unlike most businesses which are fairly product oriented and whose principal staff are fairly narrowly focused, a comprehensive university (and especially a university system) has a broad range of experts covering nearly all fields and in touch with most emerging issues. Consequently, a fairly open participatory process involving most of the faculty groups has a fairly good chance of identifying emerging issues without using the formal scanning process commonly used by industry. The second reason why formal environmental scanning is not being implemented at this time is related to the structure of the University of Texas System; it is comprised of 14 institutions located across the state of Texas, 119,000 students and 50,000

faculty - to give the process of environmental scanning adequate attention would take more time and organization than we were willing to expend at this time. The third reason why implementation has been delayed is that preferred imaging appears better suited to stimulating an interest in incorporating more analysis of the environment into the planning process of the component institutions. The issue of using scanning is not closed to us, but we are proceeding with other processes at the System level at this stage. One component expects to use environmental scanning in this iteration of the planning process.

LOOKING AT THE FUTURE

There are many ways by which an institution may look to the future. "Futuring" and cross-impact analyses are techniques for aiding and expanding the decision-making process (Heydinger, 1983). Environmental scanning and multiple scenerio analysis are methods for collecting data on the external environment (Heydinger, 1983).

"Futuring and cross-impact analysis are local processes designed to assist particular groups and institutions in planning their own futures" (Wagschall, 1983). Futuring comes out of a military background (Enzer, 1983). In the years following World War II, concern mounted over military obsolescence and the need for the United States to be the first to develop key technologies. Technological forecasting was a process used to predict the future, but with probabilities given. Many of the best references on methodologies of futuring contain 'technological forecasting' in their titles (Boucher, 1983).

Kirschling and Huckfeldt (1980) state that "primitive persons were either futurists or they were dead":

> Cave son, who watched cave dad being mauled by a saber-tooth tiger unanticipated along the path, undoubtedly worked a little

harder at looking ahead; he probably tried periodically to improve his perspective from the vantage point of the nearest tree or hill. And he was more inclined to travel in company, even if he did not particularly enjoy it. And he probably became a little more preoccupied with killing tigers, not only because he developed a taste for tiger meat but because he could foresee the day when he and his children could live in peace. Unfortunately, the day he killed the last of the neighborhood tigers, the local volcano erupted.

Popper (1971) categorizes futuring techniques into three general types:

1. exploratory types, which start with past and current trends and make extrapolations that are projected as images of the future
2. intuitive types, which are essentially sophisticated variants on the "wise old man" technique that make speculative projections into the future
3. normative types, which start with future needs and goals and work backward to identify the technology, changes, and decisions required to fill needs and reach goals

Kirschling and Huckfeldt add that "the crystal ball is not specifically mentioned, but one cannot be sure it is not hidden in the list somewhere."

It is this third type of futuring, normative, that attracted the interest of the Office of Planning and Analysis. One of the authors (Ruddock) spent a week at the NTL Institute in a course taught by Ronald Lippitt to learn the technique of imaging a preferred future. This futuring technique stresses envisioning a preferred future over trying to predict the future. Just one of a myriad of examples of prediction being a risky business is the quote by an MGM executive reacting to Fred Astaire's screen test: "Can't act. Can't sing. Balding. Can dance a little." But what predictors of the future do not keep in mind is the idea that the future begins right now and is not predetermined. While we cannot predict the future with any great accuracy, we can imagine what our preferred future looks like, and take planned steps to make that happen. Lippitt (1983) states that "efforts at predicting have been of little value, and lead to a reactive psychology of adapting or fitting in rather than a pro-active posture of "what do we want'."

FUTURING AT THE UNIVERSITY OF TEXAS SYSTEM

With the stress on external analysis that has been placed on the strategic planning process, the System planning staff has been searching for a technique that will help the University community develop a vision of a system of the highest calibre, within the environment in which the university is likely to exist. Futuring exercises have been conducted with System Administration staff members at a series of in-house meetings, and with the Planning Representatives from the 14 component institutions. This latter session was held over a 24-hour period last week at a meeting in which other business was conducted. During this time the Planning Representatives brainstormed their preferred images for the University of Texas System in the year 1999, then brainstormed the implications for three composite images. Less than four hours were spent on this part of the agenda. Over seventy images were produced in 15 minutes by a group of 18 people. These images ranged from the specific (a computer terminal at every desk), to the general (the Cancer Center has been abolished because the problem has been solved). The participants were then asked to vote on the images they felt were most important. Each person had five votes and could vote for five individual images, or give all five of their votes to one image (or any other combination of votes and images). These seventy images were then grouped into composite images (based partly on the number of votes they received) for the next stage of the process - identifying implications. Groupings of images were used in this exercise (instead of individual images) because, in this instance, exposure to the process was as important as the resulting content. The three composite images that came from this exercise were: equity in funding for all components, excellence in what each component does, and improvements to the structure of the

System. This first composite image, equity in funded for all components, consisted of images such as: scholarship money for qualifying students, funding based on strategic planning, increased endowments, full and adequate formula funding, etc. Examples of the images that comprised the second composite image, excellence in what each component does, are: 60 leading graduate departments, 25 Nobel Laureates (grown in-house), the number one pulmonary center in the nation located in Tyler, etc. Improvements to the structure of the System were exemplified by no upper-level institutions, unique component identities, clusters of research centers across the state, etc. For each of these composite images, subgroups of participants (self-selected based on interest) were able to identify from four to 13 action steps (or implications) that needed to be taken in order for these images to become a reality. The Planning Representatives, some of whom doubted the process, were surprised to find that some of the same themes were underlying the action steps for all three images, even though they had been developed by different groups of people, starting from different topics. These action steps included steps such as: develop a System Plan in cooperation with the Presidents of the component institutions, review the structure and function of the Coordinating Board, Texas College and University System, make the Board of Regents more geographically representative, etc. The next step in the process is one of analysis - taking the themes underlying the action steps and conducting an in-depth study on them. This will be coordinated by the System Office of Planning and Analysis, but done by subgroups of the Planning Representatives. The Planning Office is also considering among its next moves conducting futuring sessions with other significant groups within the University of Texas System.

IMAGING AND TECHNIQUES FOR ANALYSIS OF THE EXTERNAL ENVIRONMENT

The technique of preferred imaging discussed in this paper was used to get people thinking about the future and how it relates to the external environment and the planning process. The Office of Planning and Analysis will continue exploring ways to strengthen the external analysis portion of the planning process. We are looking at environmental scanning, workshops, symposia, and other variations on futuring, as well as preferred imaging. The individual components are using several different approaches and are sharing results with each other and with the System office. The exercise with preferred imaging has helped to stimulate discussion of other techniques.

SUMMARY

The idea of identifying emerging issues and formulating a constructive response should contribute to the relevance of educational programs and enhance the education of today's and tomorrow's students. The University of Texas System Office of Planning and Analysis has looked for a methodology to do this. Formal environmental scanning was considered, but implementation has been deferred while experimenting with techniques of imaging preferred futures. At the present time, the Office of Planning and Analysis is involved in a series of futuring sessions with various constituencies from the 14 component institutions. By helping those involved in strategic planning look to the future as something that can be influenced, the component institutions will create stronger plans.

BIBLIOGRAPHY

Aguilar, F.J. Scanning the Business Environment. New York: Macmillan, 1967.

Boucher, Wayne I. "Selected Bibliography" in J.L. Morrison, W.L. Renfro and W.I. Boucher (eds.) "Applying Methods and Technology of Futures Research." New Directions for Institutional Research, no. 39. San Francisco: Jossey-Bass, September 1983.

Cornish, E., et al. The Study of the Future. Washington, D.C.: World Future Society, 1977.

Enzer, Selwyn. "New Directions in Futures Methodology" in J.L. Morrison, W.L. Renfro and W.I. Boucher (eds.) "Applying Methods and Technology of Futures Research." New Directions for Institutional Research, no. 39. San Francisco: Jossey-Bass, September 1983.

Fahey, Liam and King, William R. "Environmental Scanning for Corporate Planning." Business Horizons, August 1977.

Hambrick, Donald C. "Specialization of Environmental Scanning Activities Among Upper Level Executives." Journal of Management Studies, vol. 18, no. 3, 1981.

Heydinger, Richard B. "Institutional Research and Planning: Is Futures Research the Next Step?" in J.L. Morrison, W.L. Renfro and W.I. Boucher (eds.) "Applying Methods and Technology of Futures Research." New Directions for Institutional Research, no. 39. San Francisco: Jossey-Bass, September 1983.

Keller, George. Academic Strategy. Baltimore: The Johns Hopkins Press, 1983.

Kirschling, Wayne R. and Huckfeldt, Vaughn E. "Projecting Alternative Futures" in Paul Jedamus, Marvin W. Peterson and Associates, A Handbook of Planning and Institutional Research. San Francisco: Jossey-Bass, 1980.

Klein, Harold E. and Newman, William H. "How to Integrate New Environmental Forces into Strategic Planning." Management Review, July 1980.

Lippitt, Ronald "Future Before You Plan" in R.A. Ritvo and A.G. Sargent (eds.) The NTL Managers Handbook. Arlington, VA: NTL Institute, 1983.

Morrison, James L. and Renfro, William L. "Workshop: The Application of Futures Research Techniques in Strategic Planning" Presented at the Twenty-Fourth Annual Forum of the Association for Institutional Research, Fort Worth, Texas, May 1984.

Popper, S.H. The Simulation of a School of the Future: A Report of an Exploratory Study." Minneapolis, Minn.: University Council for Education Administration, 1971.

Renfro, William L. and Morrison, James L. "The Scanning Process: Getting Started" in J.L. Morrison, W.L. Renfro and W.I. Boucher (eds.) "Applying Methods and Technology of Futures Research." New Directions for Institutional Research, no. 39. San Francisco: Jossey-Bass, September 1983(a).

Renfro, William L. and Morrison, James L. "Anticipating and Managing Change in Educational Organizations." Educational Leadership, September, 1983(b).

Terry, P.T. "Mechanisms for Environmental Scanning." Long Range Planning, vol. 10, June 1977.

Wagschall, Peter H. "Judgmental Forecasting Techniques and Institutional Planning: An Example" in J.L. Morrison, W.L. Renfro and W.I. Boucher (eds.) "Applying Methods and Technology of Futures Research." New Directions for Institutional Research, no. 39. San Francisco: Jossey-Bass, September 1983.

APPENDIX

HOW TO SCAN THE ENVIRONMENT

After it has been determined that environmental scanning can be a vital force in the structure of an organization, a system for scanning should be developed. Renfro and Morrison (1983) suggest that the environmental scanning process begin by asking the question "What issues face our present or planned operations that you believe will demand a response in the future and that have not yet begun to receive any significant attention?" This article is one of the few attempts in the literature to tie environmental scanning to higher education.

To organize these emerging issues, it is suggested that the environment be broken down into four areas: social, technical, economic and legislative/regulatory. These areas help to classify the information received. They can also be used as assignments for the people involved. Although one person can run an environmental scanning system, Renfro and Morrison suggest that several top adminstrators should work together. Scanning the environment is used here quite literally. Renfro and Morrison suggest that specialized magazines, periodicals, newspapers, newsletters, news sources and public opinion polls be included in the materials to be scanned. A file is started on each emerging issue. While reading printed material is one way to scan the environment, another way is to ask people what they see as emerging issues. This can be done either formally or informally.

DEVELOPING AN IMPACT NETWORK

After establishing a distinct set of emerging issues from the scanning process, Renfro and Morrison suggest that administrators determine the

various possible impacts of an emerging issue on their institution and as they state "sharpen the issue into a scenario." This is done by asking "What would happen if...?" and responding with direct or first order effects. For example, if the issue were elimination of mandatory retirement, then ask "What would happen if mandatory retirement were eliminated?" First order effects might be fewer entry-level positions in the job market, people changing careers more often, restructuring of retirement programs, etc. From these first order effects, the same question could be asked again, "What would happen if people changed careers more often?" which would lead to second order effects such as an increase in salary levels, need for further education, etc. This process can go on until one feels that the issue has been sufficiently explored and a satisfactory impact network has been obtained (usually extending to third or fourth level effects).

Renfro and Morrison talk in terms of "the blinders we wear" -- the fact that people are resistant to new ideas and opinions. Most administrators usually have the same information available to them - unless they go out of their way to collect information from news sources involved in change. We must be open to new ideas and issues, or the scanning process cannot be effective.

EFFECT ON HIGHER EDUCATION

Once an impact network has been developed, the institution can next attempt to establish the areas in its organization that the scenarios will directly affect. To continue with our example, the second-order effect of 'need for further education' should have a significant impact on the types of new programs and degrees offered and the type of student sought. This is the stage of environmental scanning that can impact higher education

today if applied.

MAKING ENVIRONMENTAL SCANNING WORK

Too often new ideas in higher education (or other areas for that matter) come forth, enjoy a few years of popularity, and are left to fall by the wayside. How many institutions have thick volumes of five- and ten-year plans that sit on the shelf and collect dust? In order to make environmental scanning work in higher education, an institution must:

1. gather full support for the effort from the chief administrative officer;
2. assign specific projects or areas to individuals;
3. organize external information received according to the issues addressed;
4. evaluate such information to determine its effect on your institution;
5. tie information gained to the planning process

The above order of events for environmental scanning is a basic and general list. The process should be tailored to the organization and individuals using it, thus causing each institution to develop its own style for identifying and responding to emerging issues.

Administrators should take heed of George Keller's (1983) words when trying to establish an environmental scanning process:

> It is a common flaw among the highly learned in academe to prefer to do very little until near-certainty and rigorous methodologies have been worked out. But life does not allow such delays. We must act, doing the best we can with what we have. Herodotus and Thucydides wrote the first histories without a tidy method. Environmental scanning, too, should proceed regardless, adjusting regularly to new conditions.

Another thing that administrators should keep in mind when setting up an environmental scanning process is the use of in-house experts. As Heydinger (1983) points out, "The irony of higher education scanning operations is that private corporations hire our faculty members to provide forecasts, while administrators overlook these valuable sources of information."

While environmental scanning is most often ured as a source of input into the planning process, there are other uses for the information collected. Terry (1977) cites organizational development and design, development of agenda for executive boards or boards of management, and management education as other uses for environmental scanning.